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THE FARMER.

SATURDAY, JULY 6, 1833.

CLOVER HAY.

As the season for making clover hay has arrived, we would respectfully recommend, to those who follow the old method of spreading the swath, a fair *trial*, though it be on a small scale, of the method of curing this grass altogether in swath and cock. We can assure those who distrust this practice, that they will not only find in it a manifest saving of labor, but a great improvement in their fodder. And in speaking of clover, we include all grass in which red clover constitutes a third or more of the crop. We will briefly state our process, and then the reasons, which we think, nay, which we *know*, entitle it to a preference over the old method.

The mowers commence cutting, if convenient, when the dew is off the grass, in the morning, of a fair day, and may continue till sundown. At two or three P. M. one or more laborers proceed to cock the grass from the swath. For this purpose three swaths are assigned for a row of grass cocks. The grass is collected with the forks, and placed on dry ground, in as small a compass as convenient at the base, say two to three feet in diameter, and to the hight of four or five feet, terminating in a cone or point. In good weather all that is cut before twelve, or two o'clock, is fit to put into grass cocks the same day. That which is cut later in the day, may lay in the swath till eleven or two the next day, when it may also be cocked. The grass may stand in these cocks till the third day, when, if the weather is fair, the cocks may be opened at nine or ten, and, when necessary, the hay turned over about mid-day, and at three or four thrown into piles for the cart. The hay is then made; and there is scarcely a leaf or blossom wasted.

The advantages of this over the old method, are,

1. The labor of spreading from the swath, is saved.

2. The use of the hand rake may be dispensed with, if the horse rake is used to glean the field when the hay is taken off—the forks sufficing to collect it tolerably clean in the cocking process.

3. It is not liable to be seriously injured by rains—for these cocks, if rightly constructed,—(not by rolling) will sustain a rain of several days, that is, they have done this repeatedly, without material injury from heating or becoming wet. And if the grass is in swath, it is too green to sustain damage. Though in the latter case, it is our practice, when wet in the swath, to shake and spread the grass, to free it from the water, and to put it in grass cocks as soon as it will do.

4. The hay made in this way may be almost invariably housed in good condition; and if rains intervene after the grass is cut, its quality is infinitely superior to what it would be under the old process of curing.

The rationale is simply this; to convert grass into hay, it is only necessary to get rid of the surplus moisture, which can only be effected by evaporation. Exposed to a fervid sun the leaves and blossoms of clover dry and crumble to powder ere the stem is sufficiently cured; hence, to preserve the first, which are the finer parts of the hay, all the parts must dry alike. This is effected in the cock; where an equalization of moisture takes place, as in a pile of wetted paper, for the printing press, and where evaporation progresses. The exterior of the stem and the leaves, are partially dried in the swath; and what is called sweating, is merely the passage of the excess of moisture in the suculent stems, to restore the equilibrium to the surface. When this has taken place, evaporation is greatly facilitated on exposure to the sun and winds. Too long an exposure, when the cocks are opened, should be guarded against. The drying process is continued after the hay is gathered for the cart, and until it is deposited in the barn.

BLACK TARTARIAN CHERRY.

J. J. THOMAS of Cayuga county has furnished us with the dimensions of a Black Tartarian cherry, which he has carefully and accurately taken: greatest diameter *one inch and one tenth*—diameter in the direction of the stem, *nine tenths of an inch*—circumference *three inches and two tenths*. This specimen was the largest which he found, but very little larger than many others.

Our object in this notice is not to show the effects of superior management,—for we understand that the lot in which the tree stands, is in grass; and has had no kind of cultivation for nearly two years,—but to give such of our readers as have not seen it, some idea of the size of this fine fruit. Those who have fruit gardens and have not this cherry, had better procure it with all convenient speed. Its excellence is undisputed.

LINDLEY'S GUIDE TO THE ORCHARD.

We have obtained a copy of *Lindley's Guide to the Orchard and Fruit Garden, with notes explanatory and practical. By* MICHAEL FLOY, *Gardener and Nurseryman, N. York. 12 mo. pp.* 408. We think every attempt to describe and to make better known to us, the finest fruits adapted to our climate, must prove useful; but this is a work of high character, bearing internal evidence that it has been prepared with great care and labor. Every man who deals in, or cultivates the better kinds of fruit, ought not only to *read* it, but to *keep* it as a book of reference. But we will give the American editor an opportunity to be heard on its behalf:

"The Catalogue published by the [Horticultural] Society [of London] in the year 1826, is evidence of the zeal and industry with which their labors have been prosecuted. It contains of Apples, 1205 names; of Pears, 622; Plums, 298; Peaches, 224; Apricots, 54; Cherries, 246; Nectarines, 72; Grape Vines, 157; with more than half as many names, which were even then considered as synonymes or mere duplicates of the same variety,—together with (we quote from the advertisement to the catalogue) 'nearly 1000 more of less certain authority, all of which were actually under a state of cultivation in the garden of the society.'

"It was manifest from the very appearance of this list, that it was altogether too large,—that a great proportion of the names admitted into the text were mere synonymes, and that a number were fruit of no value whatever. Indeed this was well known to the compilers of the catalogue, who intimated that when all the fruits came into bearing, the good would be selected from the poorer sorts, and something like order be restored.

"There was wanted a union of botanical science and practical experience to take hold of the subject, to simplify and arrange the heterogeneous mass: to describe and classify fruits of real worth; and with unsparing hand to lop off redundancies, and banish forever, if possible the very names, (however pompous and high sounding) of fruits comparatively worthless.

"The well known abilities of Mr. Lindley, for a work of this nature, pointed him out as the most suitable person for undertaking it. The task has been accomplished in a masterly manner."

The work is destitute however, of engravings or figures of any description; and we must consider it a defect. Plain, or coarse, as many of the *cuts* are in Coxe's Treatise on fruit trees, they assist the reader very materially to form a proper idea of the fruit. We have no intention to recommend colored engravings, because the high price in many instances, must exclude such books from the very hands, into which if put, they would prove the most useful. But drawings on stone might be employed; and where is the nurseryman who wishes to understand his business, as every *honest* man would do,—who would begrudge five, ten, or even twenty dollars for a volume which would enable him to detect the blunders or impositions of others, and preserve him from wronging his customers? Such a work is very much wanted.

We wish not to make too much of trifles; but we are unwilling to see names which have been long received and established, changed in consequence of a slip of the pen, or a mere typographical error. We particularly refer to that of *Seckel* corrupted into *Seckle*. The former orthography was as well established at Philadelphia, as that of any other family name. We must also refer to *Spitzenburgh* changed to *Spitzemberg*. We have not been able to trace this corruption farther back than to Coxe's Treatise, which in such a matter, we deem very incompetent authority; and we place in opposition the example of the late Governor CLINTON in his Introductory Discourse, and the practice of William Prince, Esq., of Flushing, in his Catalogues. We might add several other very respectable names. V.

☞ We intend to resume our remarks on this work in a future number.

QUINCE TREES.

At page 149, present volume of the Farmer, I notice some remarks calculated to impress the belief that manure is injurious to the quince tree; and I always feel great deference for whatever may be stated as the result of personal observation. To state from actual experience what *has been done*, is worth much more than the mere theory of what *may be* or what *should be done*. How-

ever, after all, the writer referred to and myself, in regard to the treatment of the quince, must differ a little. He objects to manure, and I am much in favor of it. It would appear that manure was the means of destroying his trees, but on mine it produced a very different result. However, after all, we may not differ quite so much as the appearance at first thought would seem to justify.

For the last ten or twelve years I have manured my quince trees quite freely with manure from the *hog pen*, and for that period of time, my trees have grown freely, much better than ever before. Now I am inclined to think that friend C. made use of manure from the barn-yard; and it possibly may have occasioned the difference in the result. I am more inclined to think so, from some little experience of my own. Some twenty years since we had but very little success in endeavoring to cultivate the quince. They were manured freely with barn-yard manure, grew finely, but much of the wood died annually, and frequently the whole tree, and for the space of eight or ten years, but rarely a quince was produced. The general impression then was, that this country was quite too cold for the quince, supposing that their premature decay was occasioned by the severity of winter. But since we have made use of manure from the hog-pen, they have grown rapidly, bore fruit, and we now consider them quite as hardy as the plum or peach.

Very respectfully, BENJ. HODGE, Jr.

Buffalo Nursery, June, 1833.

RESULTS OF EXPERIMENTS.

Having received the two communications which follow, we resume the discussion relative to the transmutation of Wheat to Chess. We do this in the full belief that it will be productive of good. It cannot be doubted but that if the idea now so generally prevalent,—that wheat produces chess,—can be exploded, a great saving may be made by those who now act upon an erroneous principle. We have recently conversed with several farmers upon this subject, who assure us that they raise little or no chess upon their farms. One gentleman informed us that when he came into possession of his present farm, he found it produced chess in great abundance, more especially in his wheat fields. One lot, which was seeded to wheat when he purchased, produced so much chess that a part of it was considered not worth harvesting. Not being a believer in the doctrine of transmutation, he made it his first business to eradicate all the chess on his premises. In two years he found his farm nearly rid of it, and having taken great pains to clean his seed wheat, he had not been since troubled with chess. We allude to this fact for the purpose of showing the importance of arriving at the truth on this point, and consequently that its discussion is important; and because if half a dozen men can raise wheat without raising chess, we see no reason why others may not do the same.

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I have just returned from Perrinton—I called to see my esteemed friend, Gideon Ramsdell, who took me into his own and his neighbor's fields to view some colts, from two to three weeks old, which do much credit to their imported sire, Sir Isaac—also into his yard to view his cows, some of the Devonshire and some of the short horned Durham breeds. The appearance of the cows, with their extended bags, was proof of good cows and good pasture. The conversation turning upon the subject of raising chess from wheat, he informed me that he had a crop growing which had not yet come to sufficient maturity to afford decided proof, yet he was confident of supporting all he had said on the subject, by proving it to a demonstration. I was anxious to see the progress of his experiments, and he took me to a spot in his door-yard where he had planted a head of his prepared wheat. Nothing was visible but the stalk and blade—those had not exactly the appearance either of wheat or grass, yet there was a resemblance of each; but being in a shaded situation, I did not view it as a good experiment. He then took me to another spot, and showed me another bunch, which bore almost an exact resemblance to the former, and similarly situated—he then took me to his third and best sample, which was planted in hills, say six or eight, on a straight line, by the side of the fence. These, to appearance, had been well tended, being kept clear from grass or weeds—there was a number of stalks in each hill. The resemblance of all the hills was the same as the other samples we had seen, only they were in a more thriving condition. But the proof was yet concealed from our view—we had not discovered heads. It was at the early twilight, and being inclined for a close search, I placed my head near the ground for bringing them to view in contact with the western atmosphere, when I fully discovered the small grains of chess on the fibers of the heads which had just peeped from their hidden situation in the protecting leaves. There was but one of the several bunches which was in such a state of forwardness—this contained a number of stalks which afforded sufficient proof that they were all chess—the other bunches bearing so exact a resemblance to that one, it left no doubt but they would all be chess. After plucking some of the spears for a sample to look at, he took me to a fourth, which was in his wheat field, where, he said, he had sown some which had undergone a partial process in the same way as that which we had just seen—the object was to produce wheat and chess from the same kernel. We found in this strip, which was in a flourishing condition, and surrounded by high grown wheat, a mixture of both wheat and chess, perhaps nearly equal parts, while the surrounding wheat appeared clean from the latter. From the examination which we were able to make at this early period, we did not succeed in finding both to grow from the same kernel. I scarcely need mention the high gratification it was to Gideon to meet with so favorable a result from his experiments, which no doubt he will soon give to the public in minute detail. M. ATWATER.

Brighton, 6th mo. 10, 1833.

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I suppose that it is the wish of those who feel interested in the cultivation of wheat, to know the result of the experiments which have been tried of late on the production of chess from wheat prepared for that purpose.

In the month of October last, Mr. Gideon Ramsdell, of Perrinton, sent me seven heads of wheat, which he said was "prepared so as to produce nothing but chess," and requested me to "plant it in some secure and safe place, and cover it about two inches deep, and watch the result of the experiment;" and he said he would not "take my money," but requested me, "when I was convinced, to strengthen my brethren." I planted and watched the wheat according to his directions, and it is now headed out, and I am convinced that it has produced nothing but wheat. There is not, and has not been, one head or spire of chess produced by the wheat which he sent me.

I suppose there are others who have tried the same experiment on wheat prepared in the same way, and by the same person, and I hope soon to hear the result of their experiments.

HEMAN CHAPIN.

East Bloomfield, June 24, 1833.

THRASHING MACHINES.

The utility of thrashing machines, having been latterly a subject of inquiry and discussion, in the Genesee Farmer, I take the liberty to speak in commendation of the Machine of Messrs. Stanton and Stafford of Syracuse.

I displaced the last season a machine of smaller power and capacity to admit theirs. Several of my neighbors purchased machines of them also. And I have understood those who have used this thrashing machine to be well satisfied with its performance. The thrashing is done by wrought iron beaters, well secured by staples, reaching quite through the cylinder. The spaces on the cylinder between the beaters, have pointed spikes, which distribute the sheaf as it passes, giving regularity to the work. The bed piece is supported on springs which yield to over feeding, or the accidental admission of any stick or stone. The horse power is of cast iron, simple and strong in its construction. Four horses are necessary to work it advantageously. Their gait however, is, as it ought to be, a slow walk. The gudgeons of the cylinder run with great ease and steadiness in boxes of zinc.

It could scarcely have been suspected, but for some recent observations in the Farmer, that any one could now doubt the advantage to our country of the general introduction of thrashing machines. Two thirds of the wheat crop of western New-York ought to be sold at the autumnal market. This cannot be done by the use of the flail; for the work is required when the farmer wants nearly all his time and labor, in seeding for the next harvest, securing his summer crops, &c. The thrashing machine then, enables the farmer, not only to get a better price on the average of years, but to realize the avails of his chief money-producing crop, from six to nine months in advance of what he could do, by the tedious old process of winter flail thrashing. It may also be added, that it is almost impossible, to thrash flint wheat now extensively grown in our country, with any approach to cleanness, except in a good machine.

Z. BARTON STOUT.

Richmond Hill, June, 1833.

LARGE STRAWBERRIES.

Almost equal to Rochester.—A correspondent of the Watertown (Jefferson county) Eagle, who signs himself "One of the Guests," says—that at a feast of that delicious fruit, from the garden of Maj. E. Kirby, of Brownville, given last evening by Mrs. Kirby, to her neighbors, I had the curiosity accurately to measure twelve of the strawberries with which the center dish of the table was ornamented;—the result of which, noted at the moment, was as follows. Five of them

measured 3 1-2 inches each; four measured 4 1-4 inches each; one 4 3-8; one 4 1-2, and one strawberry measured *seven inches and one eighth* in circumference. Total 50 1-2 inches, or averaging 1 3 16 inches each.

COOKING CAULIFLOWERS.

In answer to E. N. in regard to cooking cauliflower, I would say, that from the experience I have on the subject, the best mode for preparing the cauliflower for the table is as follows: Cut of the middle size when close and white, trim off the out side leaves, cut the stalks off flat at the bottom, and let it lie in salt and water a little while; then put it into boiling water with a handful of salt in it; have plenty of water and keep the vessel uncovered; skim the water well untill it is well parboiled. Next it should be immersed in cold water for some time, say fifteen minutes, till it is nearly wanted for the table, then on being boiled for a few minutes it will become more firm and crisp than if cooked in the usual way, that is without being immersed in cold water. A small cauliflower will require from fifteen to twenty minutes, and a large one from twenty to twenty-five minutes to cook; the rule is to take it up as soon as a fork will enter the stem easily, a minute or two longer boiling will spoil it, and its excellence may be destroyed by an ignorant or careless manner of preparing it for the table.

It may be eaten with the gravy from the meat, or drawn butter, or with vinegar as best suits. If it is designed to imitate green peas, a little loaf sugar previously made fine should be sprinkled over it immediately before serving. It should never be forgotten by the cook that the water must be boiling whenever the cauliflower is put into it, whether once or twice, and should be skimmed during the time it is cooking. O. T.

Medina, June 28, 1833.

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We can inform our correspondent E. N. that "Okra succeeds in Genesee." We have not become fond of it however; and have ascribed our want of taste for this vegetable *in part* to the inferior kind which is commonly cultivated. In South Carolina the *white Okra* is preferred. For further particulars, including the best method of cooking it, we refer to two very interesting communications from JOHN D. LEGARE, Esq., Editor of the Southern Agriculturist, which may be found in *our* vol. 1, page 260, and vol. 2, page 81.

To the lovers of small birds (barbecued) we particularly recommend *the cedar bird* which frequents the cherry trees at this season. Nothing can be more delicate, as it fattens exclusively on fruit; and it is well known to such as are skilled in such matters, that the flesh of poultry is good, or indifferent, according to their food.

ERRATA.

Page 190, in the list of Apples added to the Catalogue of the London Horticultural Society.

For Pomme de Apin, read *Pomme d'Apui.*

For Sapron, read *Sapson.* This variety sprung from a seed found in a chest of tea, brought from India in the ship Sapson, and was first raised in Providence, R. I.

For Hughis, read *Hughes'* Crab—the highly esteemed Crab for cider.

Note *f.*, for remarkably true, read remarkably fine.

In Spitzenbergh *n* should be substituted for *m*, as this apple derived its name from the gardener who first brought it into notice, and who was in the employ of the grand-father of Gen. Stephen Van Rensselaer, of Albany. Thus the *Esopus* Spitzenbergh originated in Albany.

Visit to the Linnean Botanic Garden of Flushing.

On the 10th ult. we took steam-boat up the East river to the rural village of Flushing, where is the well known garden of Messrs. W. Prince & Sons.

The first subject to which we would invite the attention of our readers is the collection of Dahlias, comprising about six hundred varieties, three hundred of which have just been received from European collections. Among those the most novel and rare are a number of striped varieties, and one of deep crimson hue, with a white border. One bed contains nine hundred and thirty-six plants. These, with an equal number along the borders, will present, when in full flower, a blaze of beauty probably never surpassed.

There were pointed out to us four varieties of the Judas Tree, Cercis, in flower—the European red and white, and the American red and deep crimson; the latter highly interesting, found wild in Maryland, and transferred to the garden by inoculation.

A Magnolia grove, containing above sixty large trees of various species, producing flowers and seeds in abundance, afforded a sight of this pride of American forests not elsewhere seen in this part of our country. It has often been remarked that this grove presents its greatest display of bloom at the period of the birth of Linneus, the 24th of May, thus seeming to honor the day that gave birth to the father of botany. A lofty tree of the M. cordata, or yellow flowering magnolia, was resplendently in bloom Of this last, Messrs. Prince have two distinct varieties, one of which originated with them from seed. This species produces flowers twice during the season, in May and August. Of the Magnolia conspicua we were shown a tree ten feet high. The M. obovata was in its prime, as well as the M. gracilis and pyramidata: the purple and cream-colored blossoms of the former present a striking and beautiful contrast to those of the other species. The varieties of the M. grandiflora, one of which has double flowers, were equally admirable. The white purple tinged flowers of the M. soulangiana had just disappeared. We were pleased to learn that all these varieties of the magnolia stand our winters without the least protection, as was evinced by their vigorous appearance in one of the most exposed situations in the garden.

A large number of the Wistaria consequana attracted attention by their splendid floral attire. It is a hardy climber, and supposed capable of standing the winters of Quebec.

A large plot of Azaleas, containing upwards of fifty varieties, presented blossoms of every hue. Among them were the yellow and the orange, and one of double flesh colored blossoms. In addition to these were rare Chinese Azaleas The scarlet Cydonia japonica was splendidly decked with flowers. Not less gay was the double variety, blush or white flowering. The fruit of the first is small, but that of the last is of considerable size, and possesses a delightful and powerful fragrance, making odorous preserves. Along the main avenue is a number of trees of the Scotch Roan, or mountain ash, and near one of them is quite a lofty weeping birch, transplanted originally from its native highlands, overshading a seat suited for the perusal of Scotland's romances and poems. A purple leaved beach attracted our attention by the feuillemort hue of its foliage, giving the casual observer an impression that it was in its last stage of existence.

The roses, amounting to seven hundred varieties, are arranged in large plots or beds, and numbered according to the catalogue. Among them is the yellow musk cluster. Specimen plants of the China roses are planted in separate beds. Of this class are one hundred and sixty varieties, thirty of which are of the latest importation. We were surprised to find the Kerria (formerly Corchorus) japonica so perfectly hardy and resplendent with flower. The Irish yew is distinguished for its erect position, and the deep green of its foliage—a beautiful plant. The Messrs. Prince have near one hundred plants of the Hamiltonia oleifera or oil nut.

Among the trees which should be in every situation, where animation as it were is to be given to the landscape scene, the Silver Abeel tree should be found. The upper surface of the leaves being green, and the under side white, their quivering in the gentle zephyr enlivens the eye. There were three species of the snow-drop tree, with their pure white blooms in wreath. The variegated or striped leaved hollies are interesting from the diversity and beauty of their foliage. The leaves of some are covered with prickles that occasion them to be called hedgehog holly.

It was satisfactory to us to find the following trees and shrubs perfectly hardy and acclimated: Three varieties of the Chinese calycanthus, the white, the yellow, and the grandiflora, the two former in an open situation, and the latter in a southern exposure—the Buxus balearica or Minorca boxtree—the spreading and upright cyprus tree—the Pistachia vera, or true pistachia nut—the Potinia serrulata of China—the Rubus rosæfolius, or double rose flowering bramble—the Ilex cassine—the Lagerstremia indica, in a southern exposure.

We noticed that the branches of the Shepherdia eleagnoides, or Buffalo berry tree, had been cut off, and on inquiry, found that the plant being a male, they had been carried to some female trees in another part of the garden, to fertilize them. A hedge of the Chinese arbor vitæ was particularly beautiful. Several thousand young plants were in growing for the same purpose.

The plot containing the collection of Peonies is extensive, containing 2500 plants of near fifty varieties. The Peonia moutan is one of the most magnificent of flowers, of which Messrs. P. have several varieties, some of them seedlings. They also have about 150 plants from the seeds of the Peonia whitleji, impregnated with the humei, and P. fragrans. These last are not yet in flower.

A fine specimen of the weeping beech, with its peculiar and graceful curve of branches, arrested our attention; also the Fagus cristata, or crested beech.

In the herbaceous department the species are planted in beds, and arranged alphabetically. This we consider very convenient, both to the proprietors and to visitors and purchasers. In a large collection of violets the Viola grandi flora was conspicuous. There are at least a dozen new seedlings of Aquilegia canadensis.

Among the collection of Pinus we remarked the P. prinea, or stone pine, a tree recommended, as our readers will recollect, by Commodore Porter, for the excellence of its fruit.

The Messrs. Prince have bestowed much attention to the grape. They have quite a number of varieties from seed obtained by an admixture of the pollen of many varieties. It is their opinion that it is from seedlings that we must expect to obtain varieties of foreign vines, that will answer as well in our climate as our native grapes.

We observed a number of bee-hives, one of Mrs. Griffiths, and the others of common construction. The bees in the latter had all been destroyed by the miller, while those in the former were in a thriving condition.

The garden of the Messrs. Prince being a commercial one, it cannot be expected that much attention will be given to picturesque effect. The dwelling of Wm. R. Prince, however, which is connected with the garden, is admirably located for display of taste. Mr. Prince has by no means disregarded improvements. He appears rather desirous of crowding into his ornamental grounds specimens of all the beautiful plants contained in the commercial garden, than to illustrate the principles of correct taste in landscape gardening.—*N. Y. Farmer.*

A TROUBLESOME WEED.

Messrs. L. Tucker & Co.—Will you permit me through the medium of your paper, to direct the attention of farmers to a very unwelcome vegetable intruder which has recently made its appearance among us. The plant to which I refer, is known botanically by the name of *Lithospermum arvense*, but is generally called *steer craut*. Although it is but a few years since its first introduction, such has been its rapid progress that there are but few farms in this town that are not more or less infested with it. And as wheat growing is the agricultural process most favorable for its propagation, and as that article is the staple commodity of our country, it bids fair to take possession of the soil. I know of no vegetable nuisance more difficult to eradicate or destroy than this, when it has once obtained introduction. Presuming that most agriculturists are already acquainted with the plant, I shall not be very minute in describing it. It belongs to class five, *Pentandria*, of Linneus, having five *stamens*, and order one *Monogynia*, having one style. Its general description is thus given in Eaton's Manual of Botany :

"Calyx, five-parted; corol, funnel form with an open throat; stigma, two-cleft; seeds, ovate pointed, stony; stamens and pistils inclosed."

The specific description is as follows :

"Seed rugose; corol scarcely longer than the calyx; leaves obtuse, veinless."

It commences putting forth small white flowers and forming its lower seeds about the first of May, and continues thus flowering and forming seeds till June, when the wheat usually obtains supremacy. Its seeds, which are naked and in fours, become fully ripe in June or July. They are easily dislodged from their attachment, and in harvesting they are profusely precipitated to the ground, ready for the next germinating process. The seeds have one striking peculiarity, viz., their hard or flinty nature. In consequence of this property I have no doubt they may lie on the surface of the soil for years without germinating. The usual remedy therefore of seeding down lands with clover in order to destroy vegetable nuisances, in this instance fails. For when the farmer afterwards turns over his sward ground, he finds to his utter astonishment that it has increased an hundred fold. It is almost useless to mention its injurious effects; besides the increased labor required in harvesting in consequence of its wiry stalk, which by this time becomes hard and dry, it absorbs the moisture and richness of the soil. The question now presents itself, shall so noxious a plant be suffered to progress until it has a universal dissemination? or will farmers attempt its destruction? If the latter is resolved on, what is the best method to effect it?

To answer this last question is the principal object of this communication. Various methods have been adopted in order to destroy it, such as eradication, mowing it off with the wheat, &c., but have been abandoned as fruitless. Eradication is only practicable when it exists in small quantities.

In general all summer crops are unfavorable to its progress. But no one of these is so completely calculated to exterminate it as *Polygonum fagopyrum*, (buckwheat.) The agricultural process required for this, insures its destruction for the following reasons :

1. It requires the ground to be subjected to the plough and drag at the very time when the *steer craut* is in full bloom.

2. Its luxuriant growth effectually prevents the growth of the plant in question.

3. If there should be any seeds of the *steer craut* that have not germinated, it leaves the soil in a favorable condition for that process to take place. But in order to destroy this the buckwheat should be repeated at least two years in succession.

An East Palmyra Farmer.

East Palmyra, May 27, 1833.

THE RAMBLER—No. II.

Messrs. L. Tucker & Co.—Might not some good, and much satisfaction, result from a general interchange of information through the columns of the Genesee Farmer, by farmers from all sections of our state, in relation to the progress of agricultural improvement therein? My opinion on this subject is, that it would, in many cases, operate as stimulus to renewed exertion; that it would awaken new energies, and bring into requisition more ample means than are now used, for the improvement of our farms. As a class, farmers are much confined upon their own domain; hence the advantage to be derived from adopting the plan under consideration. Men are so constituted as to be influenced in a greater or less degree by the actions and opinions of their fellow men. We *see* a neighbor improving his farm, and at the same time growing rich by the operation, and seeeing, and thus knowing the fact, we follow the example. Would it not operate in a similar manner if we *heard* that our neighbors were bettering the condition of their farms, and at the same time, and by that means, progressing in wealth? I am satisfied from experience, that the true way to make the most from our farms, is to put them in the best condition. This fact, though generally admitted, is not so generally lived up to. The kind of improvement to be made will, of course, depend upon circumstances. While some find it necessary to remove the stones which cover the surface of their soil, others must adopt the practice of under draining, or removing stumps, &c. It is really barbarous to see farmers attempt to till their land while it is occupied with obstacles to oppose their present and ultimate success. They are at the same time wearing out themselves, teams and implements, and a further consequence is, they do not get half the pay for their labor and time which would be obtained by first removing all obstructions to good tillage.

When I came into possession of the farm which I now occupy, it was in a state ripe for much labor on my part. I immediately adopted the resolution that I would thoroughly clean and fence a field before I attempted to till it. In consequence of adhering to my resolution, I have not only got my fields, (as far as I have gone,) enclosed with substantial fences, but now have them in a state which enables me to cultivate them with comparative ease, and increased pecuniary advantage. It costs me about $20 per acre to clear my farm of the stones upon it, and get those stones into good wall. The profits of one good crop of corn will reimburse the expenditure.

My neighboring farmers are, many of them, making very considerable improvements in the shape of cleaning off stones and stumps, and in blind or under draining. Also by building good fences, and giving their fields better shape and proportion. The planting of trees by the road side, and around buildings, is also receiving attention. On the whole, we are waking up from our long slumbers.

Job Yeoman.

Milton, May, 1833.

"FISHERMAN'S LUCK."

To Ulmus:—Yes, I have been a fishing, and was very fond of it in my youth, and do not agree with you entirely with regard to *luck*. Much depends on knowing the habits of fishes. I remember, when a boy sitting beside an uncle of mine, fishing for flounders on the dock. There was about a dozen lines besides ourselves, sitting on the wharf. My uncle drew up many dozen, while *all* the rest of us took about *one* dozen. The old gentleman whispered me to let my line lay on the bottom. I did so, and soon took fish about with him, while the others scarcely got a nibble.

It is pretty certain that most fish seek their food on the bottom, and if the hook and bait lie there, they will be more likely to see and take it, than if it was held some distance from the bottom. I am aware that there are many exceptions to this rule. In fishing for pike, mackerel, or trout, with an artificial fly, the practice is very different. These fish look to the surface chiefly for their food. Their habits, therefore, should be understood by the fisherman, and the bait adapted to the habits of the fish; but as a general rule when fishing with dead bait, the hook should lie on the bottom or be near it. This requires some study and observation, which is not always out of the reach of even a fisherman's ingenuity.

R. M. W.

Potter, May 31, 1833.

EDUCATION.

Messrs. L. Tucker & Co.—In the Genesee Farmer, No. 22, I notice some remarks from the Penny Magazine, on the subject of general Education, which meet my views fully. We old men love story-telling, and the following anecdote may illustrate my views on this subject. It is a dialogue which occurred in my hearing between a teacher and his student, when I was a school-boy :

Student.—I have come, Sir, to put myself under your instruction.

Teacher.—You have been here before, then?

Student.—Yes. About six months before you came.

Teacher.—And what did you study?

Student.—(after a little consideration) Nothing good sir.

Teacher.—From your age and appearance I could hardly think you would spend your time and your father's money, without studying something.

Student.—No book was put in my hands, and nothing required of me but what was familiar to me at former schools; so having nothing better to do I learned to shoot marbles, play cards, make egg-nog, shoot snipes and robbins, rob gardens and orchards, and even riot at nights about the country.

Teacher.—Satan finds some mischief still for idle hands to do. Do you wish to study for any particular profession.

Student.—Only for general information, sir.

Teacher.—You are such a student as I want;

you may take your seat for the present and we will try to find better employment for you shortly.

This student was soon engaged in eight classes, and I have been acquainted with him for thirty or forty years, and have often heard him say, that he was never lonesome—his book and his own reflections always afforded him sufficient company. A man may make a good Doctor, or Priest, and shine in his profession, by studying the profession diligently, but a lawyer must have a more general education to be in any degree eminent. He must know something of Medicine, Ethics, Metaphysics, Farming, Merchandize, Book-keeping, &c. The study of the law is the study of human nature, and requires a wider range of information than almost any other profession. Hence we see our public councils filled with lawyers; but to the independent farmer such general education is always a source of amusement and not without its use. Such are my views on this subject. R. M. W.

BEES.

I have read with much pleasure the remarks of W. W. B. on Bees. He appears to have taken hold of the subject with the eye and mind of a naturalist; and will no doubt before long, arrive at very satisfactory conclusions as to the best manner of managing them. I have read attentively his remarks on page 110 of this volume. His plan of opening the hives on the top is perhaps a good one. I am inclined to like it; altho' as a general rule the less machinery about a beehive the better; and for that reason I have studied to make the subject of the hives as simple as possible. In case there be old comb in the hive that the bees will not use, that can always be easily removed, as the bees will not stay in it. But I am absolutely in favor of having the bottom swing on hinges, so as to let down when necessary to see how the bees progress, and to know whether they are disturbed by worms. These worms are truly sad fellows. I have been making a thorough examination of my hives a day or two past, the cool rainy weather giving me a good opportunity. I found, on letting down the bottoms, a number of worms around the corners inside, and some just within the mouth of the hive securely wrapped up in their web; but so that they could poke out their heads to feed; and if the bees attempted to attack them, would quickly draw back within their shelter. These I had to dislodge with my knife, and cut in two forthwith. How they got there I don't know; but presume they were hatched from eggs of last fall's deposit. These worms were stout, fat fellows, and when exposed would crawl off with prodigious celerity. I found too, where there were two boards accidentally lying upon each other, the rascals were snugly wrapped up between them, and living away as cosey as need be. In truth, great precaution is necessary to prevent their depredations. I have as yet seen no millers this season. I do not intend any shall come out from my hives if I can prevent it. In the destruction of these creatures and the worms, the falling bottom is of the greatest advantage. I am much inclined to the opinion of W. W. B. that in those contracted hives upon the Charlieshope plan, the cross-sticks are not essentially necessary. But as I calculate mine for breeding cells and habitations chiefly, I wish to have them perfectly substantial.

As to the tubes used by W. W. B. I have my doubts of their utility. I do not think they are large enough. Bees in the laboring and breeding season, and that is during all the good weather, want a great deal of entrance room to their hive. The one which is in my house garret, and which holds upwards of two bushels, has an entrance of more than a foot long by three eights of an inch high; and in fine weather it is very much crowded. And I doubt whether the tube prevents the moths entering the hive and depositing its eggs, if it be so disposed. I find that they are a vastly impudent insect; and no place seems too sacred, or too well guarded for their entrance. I am inclined to think, however, that with close attention they can soon be eradicated so as to be of little danger to the bees. There is indeed little to be apprehended from them, only in small hives, where the bees are few. But they are unsightly, disgusting things, and ought to be extirpated as soon as possible. The best way that I have yet found to detect the bee worms, is to lay a couple of shingles together, one upon the other, with a little comb or honey between them. They like to be hid. Here the moths will deposit their eggs, and the worms find enough to live on. The shingles should be examined every other day. I have killed many in this way. Lay the shingles near the hive; either above, or below, or one side; it is of little matter.

I have now some good boxes made which are sixteen inches square, and are set on the top of my hives, over the holes, to be filled with honey; and from present appearances there will be no lack. The hives are literally full of bees, and I have never seen them breed faster, or labor better than they have so far done this spring. I confess that I want much more experience in this matter; and it may be thought presumption by some, in me, to have written any thing about them; but I am well aware the subject is little understood; and I hope that those who have commenced their cultivation will carefully note their observations, so that next winter we may come together and compare notes and really see whether we do know any thing of the subject. It will be a strange matter to me, if among us all who live in this wide land of milk and honey in western New-York, a little something cannot be found out on the subject of so plain an insect as the honey bee. Where are our old friends David Thomas and Dan Bradley in these matters? Mr. Bradley surely must keep them; and our worthy friend David cannot, I think, have such an overweening affection for the thievish kingbirds and martins, that he will dispense with the company of bees, in preference to their chattering songs.

Since I have succeeded so well with my bees, several of my Buffalo friends have made them large hives, and put bees into their garrets and barns; and are now in the full tide of successful experiment. But it was really droll to see how they managed in their first operations. One of them had only a little inch augur hole through his house for them to pass through. Another had a glass window in the room against which the foolish things would fly, and buzz, and buzz till they dropped down, completely fatigued, and finally died because they did not *know more* than their owner did. But they will get rectified after a while, provided they set their minds to work and study the subject by experience. One may read all the books in the world, and then not succeed with his bees, any more than he could after reading the history of a steam engine go to work and put one together. Study and observation must go hand in hand, otherwise little practical knowledge can be attained. Ulmus.

SUN FLOWERS.

Messrs. L. Tucker & Co.—In a late number of the Farmer, *Ulmus*, one of your most interesting and valuable correspondents, puts down the sun flower as utterly useless excepting as a flower. I have no great opinion of it myself, for very profitable crops, and agree with him that it is a splendid appendage to the flowering department of the garden. I admire the stately growth of the plant as well as the flower lifting its tall head far above its more humble cotemporaries, always watching the sun to catch his first and last beams. The seeds, however, I consider valuable for feeding poultry, but not to be preferred to corn, which they always choose before any thing else. The plant may be made to produce an abundance of seeds with but very little care or trouble. The seeds should be put in the ground as early in spring as possible, and if convenient to plant them in the fall it is all the better. It requires a middling rich soil—if very rich it runs too much to stalk, and if very poor produces but little seed. As soon as the first flower appears, it throws out a great number of branches from its sides, each of which will if let alone produce a flower, which, if permitted to remain on the stalk, the seed cannot all ripen; these should therefore be removed, leaving only from four to six heads which will be well filled with good heavy seeds; but one plant should be suffered to grow in a place—plants four or five feet apart. I fed the seeds to forty or fifty fowls once or twice a week all last winter as a change of food, and they appeared to be as fond of them as of corn. And besides their grand appearance when in flower, and remaining so, as they do, for a long time, they invite into the garden and about our houses great numbers of yellow birds, attracting them away from our more valuable seeds, and bringing the sweetest of music to our windows and our ears, cheering us amidst our labors; and besides all this, they furnish food for chickens, preparing them to cook well for thanksgiving and christmas dinners, and affording us eggs for pumpkin pies in the fall. Now, duly estimating all these advantages, who would give up and condemn the sun flower?

Another of your correspondents apologizes for Ulmus by recommending a better and larger than the common sort, and says that his produces flowers three feet in circumference. This is *prodigious* large though—I should like well to obtain some of the seeds. I think this kind must have originated on the Island where the pumpkins are said to grow so large that they are used for sentry boxes. A. BRYANT.

Buffalo Horticultural Garden, May, 1833.

NATURAL CURIOSITY.

One of my neighbors (Mr. J. Prior) in the spring of the year 1831, had a yearling heifer, which ran in the same lot with his spring calves. In the month of June, he discovered that one of the calves was in the habit of sucking the heifer occasionally. Curiosity prompted him to catch the heifer and see whether she gave milk. Upon stripping her teats, to his astonishment he found

that the sucking of the calf had actually brought her to milk, and he obtained a gil from one teat. He continued milking her until the following January, when, she being with calf, he dried her off. The milk was as well flavored as that from an old cow. W. H.

N. Almond, March 20, 1833.

DRAINAGE.

(Continued from page 202.)

Much good has no doubt been done in agriculture by the various systems of drainage, which have from time to time been in vogue and the deep cross catch drains, practiced generally in this country, have, although at comparatively great expense, rendered many a marsh, and many a spouty bank, tolerably dry for farming purposes; yet, until the introduction of the "*frequent drain,*" there existed no system of thorough drainage, applicable to all soils and circumstances, and accomplishing an uniform and permanent state of dryness over a whole field, however close the subsoil.

It may here be proper to say a little on the history of this system of drainage.

From a letter by an old Essex farmer, published in the Scots Magazine of 1795, it appears the *frequent drain* was known in that country upwards of a hundred years ago, and it is indeed known in some parts of England under the name of "Essex draining," at this day It is said that Mr. Cunningham of Lainsbau in Ayrshire, followed a similar system on his property, to a considerable extent, about 30 years ago; still the principles of the art seem not to have been fully understood by any one, or, at all events, they were not generally known and rightly appreciated, nor reduced to practice to any considerable extent About twelve or fourteen years ago, Mr. Buchanan of Catrine Bank, in Ayrshire, having been told of the wonderful effects produced by the wedge draining in the carses on the Forth, was induced to try "*furrow drains,*" in his home farm, which has a very stiff impervious subsoil, and which, after twenty years of thorough cultivation, "*but without being drained,*" showed symptoms of reverting to its original sterility whenever it was sown out in grass. Mr Buchanan's first drains were wedged with peats, but it soon occurred to his acute and ingenious mind, that filling with furnace danders, or scorial, would make a more permanent drain, and as his fields had in general a considerable declivity of surface, filling with such material was necessary to prevent the water from cutting or running the bottom of the drains; he filled also with gravel, and with stones broken to small sizes, such as road metal. The *rumbling drain*, long known in the country, is, no doubt, as far as regards the filling, of the same class, yet, from the large irregular size of the stones used, it could have no pretensions to the merits of the filling here spoken of, as it rendered the passage of the water through it irregular, and hence the chance of its stopping up and becoming unserviceable. Mr. Buchanan directed his attention to the *principles* of the system, and after mature reflection, placed his drains in the crown or middle of the ridges for greater safety; for when the drains are placed under the water furrows, they are apt to get run up with soil from any accidental openings, such as mouse holes, allowing the stream of the furrow to get into them; and perceiving that the under drainage would at the same time be as effective as if the drains were placed under the water furrows. But the chief point of excellence in his discovery is, that by cutting the under stratification *longitudinally*, in place of transversely, as is done by cross drains, a more uniform and complete drainage is effected. At first Mr. Buchanan's operations were laughed at by the "KNOWING ONES" in his neighborhood, and many a struggle he had in argument to convince them; but a few years of superior crops began to open the eyes of all, and the merits of the system are now universally appreciated. Mr. Graham Sterling, of Airth, introduced the system on the hill of Airth much about the same time, filling with danders from the Carron furnaces. A tenant of his, who had not always been very forward in paying his rent, had a field drained for him by his benevolent Laird, and having been thus set fairly a-going, has ever since paid without difficulty, and has extended the system over his whole farm.

His Grace the Duke of Portland, induced, it is believed, by the favorable representation made to him by his intelligent factor Mr. Hamilton, of Mr. Buchanan's success, about six years ago introduced the system on his extensive estates in Ayrshire, and so satisfied was he of the benefits to result from it, that he at once authorised Mr. Hamilton to go to an unlimited extent of outlay on this branch. From the circumstance of his property as to stones, his Grace adopted tiles for filling the drains, and sent men from England to make them. The first seasons few of his farmers could be induced even to drive the tiles—his Grace furnishing them, and paying the expense of cutting the drains. Now there are kilns all over the district, and yet the demand is but scantily supplied The Duke charges his tenants an additional 5s. per acre for what he has drained for them, whilst it is generally allowed that the improvement is worth a pound at least. Mr. Campbell of Nether Place has also drained with tiles to a great extent on his property near Mauchline; and on the Sorn Castle estate a great deal has been done with broken stones as the filling, and the merits of the system are now completely established in Ayrshire. It is delightful to see the rapid change taking place in the aspect of the wide extent of rushy and benty surface of that rising county. In all directions lairds and farmers are seen prosecuting the system according to their means. About nine years ago, the writer of this article introduced the system on the farm of Deanston, in Monteith, and has gone over an extent of 180 acres in a most complete manner, adding the operation of the subsoil plough to that of the thorough drainage, which has produced a depth and uniformity of soil not equalled over the whole extent of any farm in the district, while this farm, in its former state, was considered among the worst. Sixty-four miles of drains have been executed on this farm. Through the recommendation of the Cargunnock Farmer Club, with the aid of Premiums, the system has been fairly started in the Monteith district. [Mr. Smith goes on to enumerate the extent of drainage on several estates, says that 80 miles were executed in 1832 on the Keir estate, and continues:] Wherever the example is set by an enterprising individual, the effects are so obvious as to lead to immediate and general imitation by his neighbors.

In proceeding to apply this system of drainage to a farm, the first object is to obtain a sufficient fall or *level*, as it is commonly termed, for a main drain, to receive the water flowing from the various smaller or ordinary drains.

This drain should be directed along the bottom of the chief hollow or valley of the grounds, where the whole, or greater portion of the drains, can be led into it. If any lesser hollows occur in the extent of the surface, they must also have their proportional mains or leaders. The bottom of the main should be at least three feet, and if possible three and a half or four feet, under the surface where it passes along; and it should have throughout as uniform a fall as the nature of the ground will admit It should be flagged in the bottom, or where flag stones are expensive, built as an inverted arch, to prevent the possibility of washing away under the side building The dimensions necessary will depend on the fall or declivity, and the area of land from which it has to receive water. With a fall in no place less than one foot in one hundred yards, a drain of ten inches wide, and eighteen inches deep, will void the rain water from one hundred acres. It is of great importance to make the openings of such drains narrow and high, as smaller bottoms and covers will suit, and be less liable to give way; and the current of water being more confined, mud and sand will be less apt to settle in the bottom. Let the sides be securely and smoothly built with flat stones, either with or without mortar; and let strong flat covers, or where such are not to be found, a rough simple arch, with thin stones and mortar, may be built, packing the haunches of the arch well up to the cut with earth beat firmly. When lesser hollows occur, crossing the fields, it is necessary to cut submains along the bottoms, about three or three and a half feet deep, and having openings of suitable dimensions formed by stone couples, or with drain tiles, or where a very large flow of water has to be provided for, with an inverted tile, and covering-tile placed above the bottom one, or with larger tiles made on purpose.

There should be a cross submain at the bottom of every field, or stretch of drains, to receive the water from all the parallel drains and such drain should always be cut six inches deeper than the drains running into it, that the water may have a free drop, which will prevent the lodgment of mud or sand at their junctions or mouths. Open cuts or ditches, either as mains or submains, should never, except from necessity, be adopted, being apt to get filled with mud and grass, by which the water is thrown back into the drains and often chokes them; besides, the loss of land—annoyance of ploughing—constant expense of cleaning—and unsightly appearance of the thing, are serious objections.

Having thus provided a main drain, with subdrains flowing into it—matters are prepared for setting off and executing the parallel or frequent drains in the field. The drains can be executed at any season when the weather will permit, but the spring or summer is most suitable for the work. It is best to execute the drains when the field is in grass, as it can then be done in all weathers in a more cleanly manner.

In laying off the drains, the first object for consideration is, the nature of the subsoil—if it consists of a stiff strong clay, or a dead sandy clay, then the distance from drain to drain should not exceed from ten to fifteen feet; if a lighter or more porous sub-soil, a distance of from eighteen to twenty-four feet will be close enough. When the ridges of the field have been formerly much raised, it suits very well to run a drain up every furrow, which saves some depth of cutting. At whatever distances the drains are placed, they should be run parallel to the ridges, which is commonly in the steepest descent. They should be run quite parallel to each other, and at regular distances, and should be carried throughout the whole field *without reference to the wet or dry appearance of portions of the field*, as uniform and complete dryness is the object; and land, which may be considered dry in its natural state, will shew wet when compared with properly drained land.

A three feet drain should be carried along the ends of these drains at the loss of the field, and at a distance of about nine feet from the fence, especially if it is a hedge fence. Such a drain is necessary for the growth of the hedge; but if made nearer, the roots are apt to get into the drain, and choke it up by degrees.

It is of importance to be accurate in laying off the drains as described, as it secures uniformity of dryness, and in all future operations, as at any time, it is easy to ascertain the line of the drain. Some people are still prone to the practise of throwing in a cross drain, or to branches going off at right angles, which is of no farther avail in drying the land, whilst a very slight inspection of the frequent drain lining will shew that much less length of drain is required to dry the same area of surface, than by the former method.

It has been pretty generally believed and argued, that drains laid off in this manner on a steep will not be so effectual in catching water—but this notion can be shown to be erroneous. Drains drawn across a steep cut the strata, or layers of subsoil, transversely. As the stratification generally lies in sheets at an angle to the surface, on making a sketch with a pencil of the usual lie of the stratification, it will be seen that the water passing in or between the strata, immediately below the bottom of one drain, nearly comes to the surface before reaching the next lower drain. But as water seeks the lowest level in all directions, if the strata be cut longitudinally by a drain directed down the steeps, the bottom of which cuts each

stratum to the same distance from the surface, the water will flow into the drain at the intersecting point of each street or layer, on a level with the bottom of the drain, leaving one uniform depth of dry soil. This reasoning applies alike to water flowing from below, or falling on the surface; the truth of this has been practically proved on a large scale, in soils of various natures, where spouty banks have been completely dried without one single cross drain. It does sometimes happen that there exists what is called an "*eye-spring*," arising from some accidental tubular opening in the substratum. In such case it may be necessary to run a small branch drain, from the nearest parallel drain, into the eye of the spring. This, however, is of rare occurrence.

A very important advantage of having the drains down the steep, is the prevention of any lodgment of mud or sand, the current having force from the declivity to carry them along to the main drain; besides in the event of any accident choking a drain, the water will either, by its altitudinal pressure, force through the obstruction, or, by bursting out at the surface, will show very nearly the spot where the evil exists. Whereas cross drains, having little declivity, are often filled high up with water for years, before the insidious mischief is discovered. It is quite necessary to fill drains, directed down the steep, with stones of a small size, say two and a half inches in diameter, or with danders or gravel, to prevent the current of water cutting or running the bottoms of the drains. The filling of drains with small sized material is in other respects preferable—no pressure will crush it, so as to fill up the interstices where the water flows—the sides of the drain are more closely and uniformly pressed, which prevents falling in or wasting—no moles, rats, mice, or other such vermin, can make way in the drains, or force such a quantity of earth in from the sides as to stop the flow of water—materials for such is more easily and generally found, and the execution is cheaper, unless the masses, from which the stones have to be broken, are very large—by collecting from the surface of a field, in fallow, all stones not larger than a hen's egg, as many can be found in most dryfield situations as will serve to drain completely a field of equal extent. These smaller stones requiring no breaking, and being gathered by women and children, cost very much less. It has been plausibly maintained by some theorists, that small materials filling a drain will be apt to catch earthy matter from the water flowing along, and become in a few years a dense mass of stony earth, altogether ceasing to form a drain. Without meeting this objection, by a train of reasoning which could be satisfactorily done, it may be quite sufficient to state, as fact, from experience, and which should be most conclusive, that the result anticipated does not take place. Indeed, the water passing into the drains, by filtration, being perfectly pure, has no sediment to deposit; for, even during the heaviest rains, the water passing from a well made drain has merely a slight milky tinge. Tiles for such drains are very expensive, costing more for tiles alone in the most favorable circumstances, than the whole cost of a broken stone drain. Coupled drains with stones are objectionable, being very liable to occasional, if not frequent failures, admitting moles, rats, &c. to travel in them, and being more apt to allow cutting of the bottoms of the drains in steep parts. Box drains are expensive, and liable to all the objections of coupled drains, with the additional fault of having a broad flat bottom, in which mud and sand are apt to accumulate and lodge—sometimes to the complete filling of the open area of the drains. Filling of drains with great irregular stones, some of them closing nearly the whole cross sectional area of what should be the open way of the drain, is too slovenly and absurd a practice to require any refutation.

The lines of drains having been marked off in the field, the drainer begins by cutting with a spade on a line, then removing a first *spading* of about thirteen or fourteen inches wide all along, another follows with a narrower and tapering spade, made for the purpose, taking out another spading, and when picking becomes necessary,—a third man follows with a pick, and a fourth with a large scoop-shovel to cast out the earth—a smaller scoop-shovel is used to clean out the bottom, which should be cut as narrow as will allow the last drainer a footing, generally about three or four inches. From two to two and a half feet from the surface, are the best depths for such drains—the latter always to be preferred. The bottom should be cut as straight and uniform as possible, so that the water may flow freely along at all places, and it is better to cut a little deeper when there is any rise of surface, than to follow it; and where sudden hollows occur, the cutting may, on the same principle, be less deep—attention to this also admits of after straightening, or levelling of the surface, without injury to the drains. The workmen, in cutting should throw the earth to the right and left from each alternate drain, as that allows the plough to go regularly and fully occupied *boutings*,* in filling in the earth, while each alternate ridge or space is left for getting in the stones free from the earth thrown out. The stones may either be laid down at intervals, by the sides of the drains to be there broken, or being broken in masses at some convenient spot, can be brought by the carts ready to be filled in. No part of the drain should, if possible, be filled in, till the whole line is cut out and inspected, but the sooner drains are filled, after having been cut out, the better. Sometimes when there is much tendency of the sides to fall in, it becomes necessary to fill in going along. Cutting in the end of summer, when there is little water in the soil, or in a dry season saves much of this. In soft or sandy bottoms, by cutting the drains to half the depth in the first instance, and allowing them to remain so until the water has been voided from the upper stratum of the soil, the lower part may then be cut out with more safety from falling in. The stones should not be filled nearer the surface than eighteen inches leaving sixteen inches free for deep ploughing.

The upper surface of the stones having been made straight and uniform, the whole should be neatly and closely covered with a thin thatch, or *flautcher devot*, or turf, cut from the adjoining surface, or brought from some suitable place. Strict attention to the correct execution of this operation is of the greatest importance, as many drains are ruined at once from the running in of the loose earth. Thick turfs are objectionable from the difficulty of getting them to fit close. Straw, rushes, broom, whins, and other like material, are very objectionable, affording no uniform or certain security, and forming a receptacle for vermin. Peat moss may be used to advantage. When the deepest ploughing has been executed, there should always remain a firm crust of earth undisturbed over the stores of the drain, and no surface water should ever have access to the free way of a drain, by any direct opening, but should find its way by percolation or filtration, through the subsoil, and should always enter by the sides of the drains. To this purpose it may be of advantage to tramp or beat down closely the first two inches of soil put over the turf, in order to form the permanent crust.

The cost of executing such drains varies, of course, according to circumstances—the cutting costing from 1s. 6d. to 3s. 6d. per rood of thirty-six yards, according to the hardness of the subsoil; the stones, if collected on the adjoining fields, will cost from 1s. to 1s. 6p per rood, the breaking from 9d. to 1s. per rood; about 1½ cubic yard of broken stones will fill a rood of a well cut drain; the putting in of the stones may be calculated to cost about 3d. per rood, and the turfing 1d.; the filling in of the earth over the stones with the plough will cost about 1d. per rood. The whole cost, per rood, of common drains may be taken at 4s. 8d., or including a charge to cover proportion of main drains, 5s.†

* "Bouting," a Scotch term for a rotation or traverse of the plough.

† The rood is the same as our rod, and the Scotch or English shilling about equal to two ninths of a dollar.

The New Haven Daily Herald mentions that new potatoes have been in that market this season.

METEOROLOGICAL TABLE.

KEPT AT ROCHESTER, FOR JUNE, 1833.

	10 A. M.				10 P. M.			
Days.	therm.	barom-eter.	winds.	sky	therm.	barom-eter.	winds	sky
1	68	29,60	W	fair	56	29,55	N E	cloudy
2	50	29,25	N E	cl'y 3-10	53	29,20	W	do
3	48	29,45	N W	do 3-10	48	29,60	W	do
4	62	29,75	W	fair	55	29,70	N E	fair
5	70	29,65	S W	do	63	29,55	N W	do
6	63	29,55	N W	cloudy	62	29,45	N W	do
7	70	29,55	N E	fair	61	29,35	N W	do
8	56	29,60	N E	do	54	29,25	N W	do
9	52	29,35	N E	do	52	29,30	N	do
10	60	29,20	N W	do	52	29,20	W	cloudy
11	60	29,35	N W	do	54	29,40	W	fair
12	60	29,45	N	do	62	29,45	E	do
13	62	29,30	S	cl'y 1-10	63	29,20	W	do
14	64	29,25	W	do 4-10	62	29,35	W	cloudy
15	74	29,25	S W	fair*	60	29,20	W	do
16	68	29,20	W	do 6 10	57	29,30	W	fair
17	62	29,45	N W	do	62	29,50	N W	do
18	70	29,65	S E	do	64	29,55	S E	do
19	80	29,50	S	do	66	29,45	S E	do
20	78	29 40	S W	do	67	29,50	W	cloudy
21	75	29,55	N	do	66	29,55	W	fair
22	82	29,55	W	do	78	29,50	W	do
23	80	29,50	S	do	74	29,25	S E	cloudy
24	74	29,10	S	cl'y 7-10	60	29,65	S W	do
25	52	29,25	W	do 2-10	52	29,25	N W	fair
26	60	29,25	W	fair	50	29,35	W	cloudy
27	53	29,50	W	cloudy	54	29,60	W	fair
28	60	29,60	W	fair	56	29,60	N	do
29	76	29,65	N W	do	64	29,60	S	do
30	80	29,55	W	do	79	29,45	W	do†

Means, therm. 62°—bar. 29.42—rain, 2 6-10in.

* Spring water 52°. † Ther. 88 deg. 2, P. M.

The m. tem. for each day in June, 1831, was 71°5′
The " " " " 1832, " 70°3′
The " " " " 1833, " 62°1′
Warmest day of June, 1831, the 3d, 2 P. M. 95°
" " " 1832, 14th " 86°
" " " 1833, 30th, " 88°
Temperature spring water, 1831, June 15th, 52°
" " " " 1832, " " 50°
" " " " 1833, " " 52°

The temp. of spring water is examined as we have stated before in order to deduce correctly the mean temperature of the country and of each particular season. The extreme variableness of the air renders observations on it alone inconclusive and subject to discrepancies, while the immunity of spring water against sudden transitions of temperature, gives to it an important relation in meteorological science. Vegetation also must depend upon the temp. of the juices received at the mouths of roots, but more particularly after we leave the class of annuals, many of which require but a few weeks of summer sun and are then ready to perish.

The past month has been much colder than is common for the season; fires have been found indispensible much of the time, and coats and cloaks were in constant requisttion. Eight degrees for every day of the month of June, colder than the two past years, must we think be attributed to accidental causes, as the presence of large bodies of ice to the N. E., and not to the revolutions of planets or a permanent alteration of the characters of our seasons. The temp. of the ground has been increasing while that of the air remains the same as during the month of May.

Yesterday, July 1st, the thermometer stood at three o'clock, P. M. 91°.

Measures are being taken to institute an Agricultural Society in Cortland county.

"THE MOTHER AT HOME."

Is the title of a small volume recently issued from the Boston press, from the pen of the Rev. Mr. Abbott of Worcester. The Boston Courier says, "it is just such a work as every mother ought to read—not merely *read*, but *study*. It is a *practical* treatise, and, in our opinion, well adapted to aid those for whom it is prepared, in the education and moral discipline of children. It is divided into seven chapters—on Responsibility, Maternal Authority, the Mother's Difficulties; Faults and Errors, Religious Instruction, Results. From the chapter on Faults and Errors, we select the following section, which is a fair specimen of the mode of illustration adopted by Mr. Abbott:"

Do not deceive children.—Many are unaware of the evil consequences which result from this common practice. A physician once called to extract a tooth from a child. The little boy seeing the formidable instruments, and anticipating the pain, was exceedingly frightened, and refused to open his mouth. After much fruitless solicitation, the physician said, "Perhaps there is no need of drawing it. Let me rub it a little with my handkerchief, and it may be all that is necessary; it will not hurt you in the least." The boy, trusting his word, opened his mouth. The physician, concealing his instrument in his handkerchief, seized hold of the tooth and wrenched it out. The parents highly applauded his artifice. But the man cheated the child. He abused his confidence. And he inflicted an injury upon his moral feelings, not soon to be effaced. Will that physician get his handkerchief into the mouth of the child again?—Will he believe what the physician may hereafter say? And when told that it is wicked to say that which is not true, will not the remembrance of the doctor's falsehood be fresh in his mind? And while conscious that his parents approved of the deception, will he not feel it to be right for him to deceive, that he may accomplish his desires? This practice is attended with the most ruinous consequences. It unavoidably teaches the child to despise his parents. After he has detected them in one falsehood, he will not believe them when they speak the truth. It destroys his tenderness of conscience. And it teaches arts of deception. And what are the advantages? Why, in one particular instance, the point is gained.

Let compulsion be resorted to when necessary, but deception never. If a child cannot place implicit confidence in his parent, most assuredly no confidence can be reposed in the child. Is it possible for a mother to practice arts of deception and falsehood, and at the same time her daughter be forming a character of frankness and of truth? Who can for a moment suppose it? We must be what we wish our children to be. They will form their characters from ours.

A mother was once trying to persuade her little son to take some medicine. The medicine was very unpalatable, and she, to induce him to take it, declared it did not taste bad. He did not believe her. He knew by sad experience, that her word was not to be trusted. A gentleman and friend who was present, took the spoon, and said,

"James, this is medicine, and it tastes very badly. I should not like to take it, but I would if necessary. You have courage enough to swallow something which does not taste good, have you not?"

"Yes," said James, looking a little less sulky. "But that is very bad indeed."

"I know it," said the gentleman, "I presume you never tasted anything much worse." The gentleman then tasted of the medicine himself, and said, "It is really very unpleasant. But now let us see if you have not resolution enough to take it, bad as it is."

The boy hesitatingly took the spoon.

"It is, really, rather bad," said the gentleman, "but the best way is to summon all your resolution, and down with it at once, like a man."

James made, in reality, a great effort for a child, and swallowed the dose. And who will this child most respect, his deceitful mother, or the honest-dealing stranger? And who will he hereafter most readily believe? It ought, however, to be remarked, that had the child been properly governed, he would, at once, and without a murmur, have taken what his mother presented. It is certainly, however, a supposable case, that the child might, after all the arguments of the gentleman, still have refused to do his duty. What course should then be pursued? Resort to compulsion, but never to deceit. We cannot deceive our children without seriously injuring them and destroying our own influence. Frank and open dealing is the only safe policy in family government, as well as on the wider theatre of life. The underhand arts and cunning manœuvres of the intriguer, are sure in the end, to promote his own overthrow. Be sincere and honest, and you are safe. The only sure way of securing beneficial results, is by virtuous and honorable means.

PERUVIAN COTTON TREE.

Mr. White has sent some of the seed to the Editor of the Baltimore Farmer, who transmits it to the delegate from Florida, for that in the South.

It grows naturally all over South America, about 20 or 25 feet high; it is perennial, thriving for twelve or fifteen years without renewal; and frequently rises to the height of twenty or twenty five feet, exhibiting a beautiful sight in the season when the largest number of bolls are open. The size and conformation of the leaves and bolls are very similar to those of our annual plant.—One species of this tree produces *yellow* cotton, resembling the East India nankeens, but the yellow is greatly inferior to the white both as regards the size of the tree and staple of the cotton. The trees are cultivated in *huertos* (or orchards) somewhat as we rear fruit trees; and they require considerable attention to trimming, &c.

OIL FROM THE EARTH.

The oil from this Well, (on Duck Creek, 30 miles from Marietta, Ohio,) is discharged periodically at intervals of from two to four days, and from 3 to 6 hours' duration at each period. Great quantities of gas accompany the discharge of oil, which for the first few years amounted to from 30 to 60 gallons at each eruption. The discharges at this place are less frequent and diminished in amount, affording only a barrel a week, which is worth at the well from 50 to 70 cents a gallon.

A few years ago, when the oil was most abundant, a large quantity had been collected in a cistern holding from 30 to 40 bbls. At night some one engaged about the works approached the well head with a lighted candle. The gas became instantly ignited and communicated to the contents of the cistern, which giving way, suffered the oil to be discharged down a short declivity into the creek whose waters passed with a rapid current close to the well. The oil continued to burn: and spreading itself along the surface of the stream for half a mile in extent, shot its flames to the tops of the highest trees, exhibiting the novel, and perhaps never before witnessed spectacle of a river actually on fire."—*Silliman's Jour.*

Linnean Botanic Garden and Nurseries.

FLUSHING, NEAR NEW-YORK.

WILLIAM PRINCE & SONS announce to all the Proprietors of Nurseries, and to those who wish to establish *new Nurseries*, that they will furnish all articles desired at a liberal discount, and a credit that will allow time for anvantageous reimbursement. We wish also to make known to all venders of seeds, and to those who desire to undertake such business, that we will furnish every variety of Vegetable, Field, and Flower Seeds, in quantities, at very low rates. These seeds possess the advantage of being raised under our own observation, or, when imported, of being tested to our satisfaction, and the *accuracy and vitality of the seeds is expressly guaranteed.* The assortment of Turneps alone comprises 27 varieties, including Dale's New Hybrid, Yellow Altringham, and all the other new and choice varieties. A number of new and choice varieties of Vegetables will be found in the Catalogue, which have never before been offered to the public. Bulbous flower roots and Dahlias, which are easily transported, and generally vended in a dry state, can be supplied to any extent at rates that will afford a large profit to the revender. Every person already engaged, or who desires to engage in the sale of the above named articles, will, on application, receive all the information requisite to the object in view, and such an establishment ought to exist in every town in the Union. The new Catalogues, with reduced prices and extensive additions to every department, will be forwarded to all applicants, and the present period is particularly suitable for forming arrangements in anticipation of the fall business. A liberal credit will be allowed on Seeds, Bulbous roots, &c. A large quantity of seed of White Italian Mulberry, Luzerne, White Dutch Clover, Ray or Rye Grass, and Yellow Locust for timber, now on hand.

It is requested that all orders be sent *direct per mail*, and, whether large or small, they will receive prompt attention. july 6-2f

FINE STOCK FOR SALE.

THE celebrated bull *Eclipse*, out of the famous cow *Princess*, imported by G. W. Featherstonhaugh Esq. of Duanesburgh, sire a North Devon, imported as above. *Eclipse* is large, of a beautiful mahogany color, in girth seven and a half feet, and his weight in 1831, (when last weighed) was rising of 2200 lbs. On his way to the West, he became foot sore, and was left on the premises of Col. Mills, at Newsted, Erie co., where he may be seen. He will be sold on liberal terms or leased for one year.

The subscriber has now on hand several very promising young Bulls and Heifers, thorough bred, got by his fine Durham Bull *Admiral*, which he will sell on good terms, and a credit given if required, on interest, for approved notes. For the terms of sale for *Eclipse*, inquire either of Col. Mills, or the subscriber.

L. JENKINS.

Canandaigua, June 20, 1833. J22.f3t

LINDLEY'S GUIDE

TO the Orchard and Fruit Garden,—price $1,50—for sale by HOYT, PORTER & Co., Rochester.

July 6, 1833.